Name _____ Class _____ Date _____

Lesson 4-4

Greatest Common Factor

Lesson Objective	**NAEP 2005 Strand:** Number Properties and Operations
To find the GCF of two or more numbers	**Topic:** Number Operations
	Local Standards: _____

Vocabulary

A common factor is _____.

_____

The greatest common factor (GCF) of two or more numbers is _____

_____.

Example

1 Using Lists of Factors Find the greatest common factor of 48 and 64.

List the factors of 48 and the factors of 64. Then circle the common factors.

Factors of 48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Factors of 64: 1, 2, 4, 8, 16, 32, 64

The greatest common factor (GCF) is ☐.

← **The common factors are** ☐, ☐, ☐, ☐, **and** ☐.

Quick Check

1. List the factors to find the GCF of each pair of numbers.

a. 6, 21 factors of 6: ☐, ☐, ☐, ☐

factors of 21: ☐, ☐, ☐, ☐

GCF of 6 and 21: ☐

b. 18, 49 factors of 18: ☐, ☐, ☐, ☐, ☐, ☐

factors of 49: ☐, ☐, ☐

GCF of 18 and 49: ☐

c. 14, 28 factors of 14: ☐, ☐, ☐, ☐

factors of 28: ☐, ☐, ☐, ☐, ☐, ☐

GCF of 14 and 28: ☐

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Examples

② Using a Division Ladder Find the GCF of 84 and 90. Use a division ladder.

2) 84 90 ← Divide by ☐, a common factor of 84 and 90.

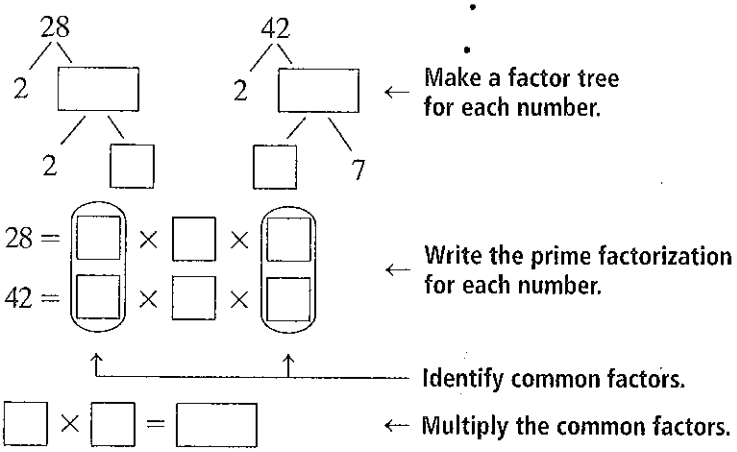
3) ☐ ☐ ← Divide by ☐, a common factor of 42 and 45.

☐ ☐ ← 14 and 15 have ☐ common factors.

Multiply the common factors: ☐ × ☐ = ☐.

The GCF of 84 and 90 is ☐.

③ Using Factor Trees Use factor trees to find the GCF of 28 and 42.



The GCF of 28 and 42 is ☐.

Quick Check

2. You want to cut two ribbons into equal lengths with nothing left over. The ribbons are 18 and 42 inches long. What is the longest possible length of ribbon you can cut?

3. Use factor trees to find the GCF.

a. 48, 80, 128

b. 36, 60, 84

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Practice 4-4

Greatest Common Factor

List the factors to find the GCF of each set of numbers.

1. 8, 12 _____
2. 18, 27 _____
3. 15, 23 _____
4. 24, 12 _____
5. 18, 24 _____
6. 5, 25 _____

Use a division ladder to find the GCF of each set of numbers.

7. 10, 15 _____
8. 25, 75 _____
9. 14, 21 _____
10. 32, 24, 40 _____
11. 25, 60, 75 _____
12. 12, 35, 15 _____

Use factor trees to find the GCF of each set of numbers.

13. 28, 24 _____
14. 27, 36 _____
15. 15, 305 _____
16. 57, 27 _____
17. 24, 48 _____
18. 56, 35 _____

Solve.

19. The GCF of two numbers is 850. Neither number is divisible by the other. What is the smallest that these two numbers could be?

_____

20. The GCF of two numbers is 479. One number is even and the other number is odd. Neither number is divisible by the other. What is the smallest that these two numbers could be?

_____